

**SUPERFUND PRELIMINARY CLOSE OUT REPORT**

**MATTIACE PETROCHEMICAL CO., INC.**

**GLEN COVE, NY**

**June 2000**

**Prepared By**

**U.S. Environmental Protection Agency, Region II  
Eastern New York Remediation Section  
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GLEN COVE, NEW YORK**

**I. INTRODUCTION**

The U.S. Environmental Protection Agency (EPA) has determined that all construction activities for the Mattiace Petrochemical Co., Inc. site (Site) have been completed in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). EPA and the New York State Department of Environmental Conservation (State) conducted a pre-final inspection on September 15, 1998 of construction of the final operable unit (OU) remedy at this Site, i.e., OUs 3/4, and determined that the remedy has been constructed in accordance with the remedial design (RD) plans and specifications as well as EPA's June 27, 1991 Record of Decision (ROD). Activities necessary to achieve performance standards have been initiated.

**II. SUMMARY OF CONDITIONS**

**Background**

The Mattiace site, which covers 1.9 acres, is located on Garvies Point Road in Glen Cove on Long Island, New York. An estimated 44,000 people obtain drinking water from public and private wells within three miles of the Site. Mattiace Petrochemical Co. began its operations in the mid-1960's, receiving chemicals by tank truck, and blending and redistributing them to its customers. Operations stopped in September 1987. M and M Drum Cleaning Co., owned by Mattiace, also operated at the Site until 1982.

The primary operations of Mattiace were the storing, blending, and repackaging of organic solvents. These solvents were stored in aboveground and belowground tanks, and they were blended and repackaged in 55-gallon drums under a covered section of the concrete loading dock located in the northeast corner of the property. The 55-gallon drums were stacked and temporarily stored on the loading dock prior to shipment to various buyers.

The metal Quonset hut located in the western portion of the property was used by the M and M drum cleaning operation to clean, pressure test, and repaint drums. The resulting aqueous/solvent waste mixture generated by these operations was collected in a wetwell in the southeast external corner of the Quonset hut. The liquids in this wetwell were periodically discharged to one of the adjacent aboveground tanks or into a leaching pool on the property.

An underground tank farm used for the storage of organic solvents was located in the northeast corner of the property. Thirty-two underground and twenty-four aboveground storage tanks existed on the Mattiace property. The underground tanks were interconnected by a spill prevention system. Excess material from overfilled tanks drained through a series of four concrete manholes and discharged into a solvent/storm water separator which was located in the southeast corner of the property. This spill prevention system also acted as a storm water collection system. Storm water from the lower portion of the separator was intended to be drained by gravity and then pumped into the northwest leach pools. However, the liquids which collected in the separator and ponded in the southeast corner of the property were sometimes pumped through a hose down the Mattiace driveway.

### **Removal Actions**

There were two removal actions conducted by EPA's Response and Prevention Branch at this Site. EPA initiated a removal action in February 1988, which included waste characterization and eventual removal of approximately 100,000 gallons of hazardous materials in drums and in aboveground and belowground storage tanks. A second removal was conducted by EPA in 1990. It consisted of the removal of a collapsed retaining wall along the western property boundary, with subsequent regrading and replacement with a new retaining wall.

The details of these two removal actions are documented in pollution reports, or POLREPS, which have been prepared by EPA.

### **Remedial Investigation and Feasibility Study Results**

A remedial investigation and feasibility study (RI/FS) was conducted to characterize the contamination present at the Site, as well as evaluate alternatives designed to address Site remediation goals. Soil contamination was found to be extensive across the entire facility area, with "hot spots" occurring in several locations. These "hot spots" were generally associated with seven groups of underground storage tanks and a drum burial area along the western perimeter of the Site. Soil was contaminated with high concentrations of a variety of volatile organic compounds (VOCs).

The RI also identified groundwater contamination in the Upper Glacial aquifer beneath the Site. The groundwater contamination is particularly severe, and includes a localized layer of "floating product," consisting of a mixture of VOCs, at the top of the water table directly underlying the Site. The concentrations of chemicals are generally several orders of magnitude above Federal and State drinking water standards. The movement of groundwater in the Upper Glacial aquifer in the vicinity of the Site is slow and generally in a southwest direction toward Glen Cove Creek.

### **Record of Decision Findings**

There have been two RODs for the Site. The first ROD was signed on September 27, 1990 and called for the excavation and offsite disposal of buried drums and contaminated soil which was designated as operable unit two (OU 2). The second ROD, signed on June 27, 1991, addressed the comprehensive remedy for the remainder of the Site. The remedial measures addressed by the two RODs were organized into six operable units, as follows:

- OU 1           - Excavation of pesticide hot spots
- OU 2           - Excavation and offsite disposal of drums and soils
- OU 3           - Extraction/treatment/reinjection of contaminated groundwater
- OU 4           - In situ soil vapor extraction
- OU 5           - Demolition/disposal of existing site structures, including aboveground and belowground tanks
- OU 6           - Pumping/disposal of floating product layer

### **Remedial Design and Remedial Action Activities**

A final RD work plan was prepared by Ebasco Services Inc. (ESI) for all of the components of the June 1991 ROD and was approved by EPA in August 1992. All subsequent design work was performed by ESI, either as ESI or later as Foster Wheeler Environmental Corporation (FWEC). OU 2, which was implemented by EPA's Response and Prevention Branch, did not require a detailed engineering design.

Remedial action (RA) activities for OU 1 were performed by Republic Environmental Systems under ESI's construction management and were completed by March 1995, as described in the July 11, 1995 Remedial Action Report. The RA fieldwork for OU 2 was completed in 1991 and is documented in a final EPA POLREP dated March 31, 1992. The RDs for OU 3 and OU 4 were completed in September 1995 and September 1996, respectively. Because funding was not immediately available to construct the OU 3 groundwater treatment facility, EPA decided, after completion of the OU 4 RD, to direct FWEC to subsequently perform a "value engineering" exercise in order to integrate the designs of the groundwater treatment and soil vapor extraction systems. This resulted in a significant cost savings during construction. The final value engineering design report, dated April 9, 1997, called for the construction of one building to house soil vapor and groundwater treatment units; common trenching and underground conduits for both soil vapor and groundwater collection; several wells that operate as both soil vapor and groundwater extraction wells; as well as some economical re-engineering of the process train

where appropriate. Construction of the OU 3/4 integrated facility was substantially completed in August 1998 by the Tyree Organization, a construction subcontractor. A pre-final inspection of the OU3/4 facility was conducted in August 1998. The facility, however, did not pass the August 1998 acceptance test as it did not meet all discharge criteria included in the State equivalency SPDES permit. Concentrations of various semivolatile compounds such as phenols and naphthalene, and some VOCs such as acetone exceeded the equivalency permit limitations. After FWEC's ARCS contract expired in August 1998, the company was retained by EPA under the RACS contract to complete start-up testing and construction punchlist items. FWEC also retained the Tyree Organization to assist in the completion of these tasks. On September 1, 1999, after approximately a year of shakedown, FWEC subcontracted to Woodard and Curran, a long-term response action subcontractor, to begin long-term operation of the treatment facility. Since that time, the facility's water and air discharges have been monitored on a regular basis. Currently, operational fine tuning adjustments continue to be made and construction punchlist items continue to be completed. Monthly progress reports, including sampling results for both treated air and treated groundwater, indicate that the treatment facility is now performing satisfactorily. Additional corrective action measures including conversion of a reinjection well to an extraction well, addition of a resin filter, and installation of a series of piezometers will be implemented during the Summer of 2000.

RA site activities for OU 5 were completed by Dow Environmental, as described in the March 27, 1997 Remedial Action Report. OU 6 was an interim action which was discontinued upon commencement of construction activities for OUs 3/4 in the Fall 1997. Floating product will be captured and treated by the OU 3/4 treatment system.

### III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

Activities at the Site were consistent with the two RODs and the RD/RA Statements of Work issued to ARCS Contractor FWEC for remedial designs and remedial actions, including construction of the OUs 3/4 treatment facility. Quality Assurance Project Plans (QAPPs) were prepared for various OU remedial actions. The components of the QAPPs include quality assurance (QA) and quality control (QC) objectives and procedures, and project organization and responsibilities including information regarding deviations and corrective actions. QA/QC procedures were adhered to during implementation of all remedial actions, including development of sampling plans, sampling, categorization of waste types, post excavation soil sampling/analysis, as well as actual construction activities.

During the construction of the groundwater and soil vapor treatment facility, the contractor's activities were monitored by the Army Corps of Engineers on a weekly basis (2-3 days per week). The Army Corps of Engineers also provided oversight of the start-up activities through February 1999 during which construction punchlist items were also addressed.

## Monitoring Results

There have been two acceptance tests of the facility since its construction was substantially completed in August 1998. The first test was over a three-day period ending on August 30, 1998. The results were compared to performance criteria included in the State equivalency SPDES permit, which contained criteria for two outfalls. Outfall 001 follows metals clarification, air stripping and carbon polishing and discharges to a groundwater reinjection gallery north of the facility. Outfall 002 involves discharge of scrubber water from the thermal oxidizing unit into Glen Cove Creek. Outfall 002 was anticipated to be used on a continuous basis only until the level of total dissolved solids (TDS) in the scrubber water was sufficiently diminished to a level which would permit groundwater reinjection through outfall 001. The first performance test resulted in many excursions of SPDES criteria, involving various semivolatile compounds such as phenols and naphthalene, some VOCs such as acetone, and conventional parameters such as five-day biological oxygen demand (BOD<sub>5</sub>). However, the facility performed sufficiently well that NYSDEC approved its operation. The second test was also over 3 days, ending on December 4, 1998. The treated groundwater again did not meet equivalency permit discharge criteria, this time primarily for VOCs, such as trichloroethylene and methylene chloride, as well as conventional parameters such as TDS and BOD<sub>5</sub>.

After further testing and operation in 1999, EPA and NYSDEC jointly agreed that the facility was operational and functional and the Site was considered to be in the long-term response action phase of remediation. This determination will be documented in an RA report. A long-term response action subcontractor, Woodard and Curran, was retained and began operation of the treatment facility on September 1, 1999. The final operation and maintenance (O&M) manual for the long-term response was submitted to EPA on December 3<sup>rd</sup>, 1999. The facility has been monitored on a regular basis by Woodard and Curran, and operational fine tuning adjustments continue to be made and construction punchlist items completed. Monthly progress reports through February 2000 suggest that the treatment facility's performance continues to improve. The data indicate that there are still occasional problems with meeting all permit limits, particularly for outfall 002. BOD<sub>5</sub> is high for both outfalls, iron is high for outfall 001, nickel is high for outfall 002, and acetone and butanone are high for outfall 002. These contaminants exceed permit criteria occasionally, although the magnitude of the exceedances is not unusually high.

Recently, TDS concentrations in the effluent for outfall 002 have diminished to levels consistent with the discharge criteria of 1200 milligrams/liter for outfall 001. Therefore, in accordance with the original plan to phase out the continuous use of outfall 002, 002 effluent will shortly be diverted to groundwater reinjection via outfall 001. This should result in a greater degree of compliance with the outfall 001 discharge criteria.



#### IV. ACTIVITIES AND SCHEDULE FOR COMPLETION

The RA activities that remain to be completed for OUs 3/4 include minor construction punchlist items and preparation of the RA Report. The schedule for completing these activities as well as other activities that remain to be completed for the Site is listed in the table below.

Task	Estimated Completion	Responsible Organization
Complete OU 3/4 Punchlist	August 2000	Contractor
Complete OU 3/4 Final Inspection	August 2000	EPA/State
Prepare OU 3/4 RA Report	August 2000	Contractor
Approve OU 3/4 RA Report	September 2000	EPA
Conduct Five-Year Review	June 2005	EPA
Complete Soil Vapor Treatment	June 2005	Contractor
State Assumes O&M	September 2009	State
Complete Groundwater Treatment	September 2029	State
Approve Final Closeout Report	March 2029	EPA/State
NPL Deletion	September 2029	EPA

#### V. SUMMARY OF REMEDIATION COSTS

The original ROD capital cost estimates to implement the remedial actions described in the two RODs are as follows:

September 1990 ROD (OU 2)	-	\$355,000
June 1991 ROD (OUs 1, 3, 4, and 5)	-	\$3,316,921 Groundwater
		<u>\$3,227,566</u> Soil
		\$6,544,487 Total for June 1991 ROD

The June 1991 capital cost estimate for "Soil" was a comprehensive estimate that included estimates for OU 1 (pesticides hot spot excavation), OU 4 (in situ soil vapor extraction), and OU 5 (building/storage tanks decommissioning) [N.B.: OU 6 was an interim, low-cost action to remove some of the floating product layer in groundwater prior to construction/operation of the groundwater treatment facility. This action was not explicitly included in the ROD, and therefore the ROD did not include OU 6 in either soil or groundwater cost estimates].

Detailed cost information for each operable unit is provided below:

##### Operable Unit 1

The excavation of pesticide hot spots, i.e., OU 1, was performed by Republic Environmental Systems, a construction subcontractor to ESI. OU 1, OU 5, and OU 6 were all performed under the same EPA work assignment issued to ESI, with an approved budget of \$1,913,590. The subcontract award to Republic Environmental for OU 1 was \$261,264. Actual subcontract cost after completion of the work was approximately \$187,000.

#### Operable Unit 2

OU 2 was performed by EPA's Response and Prevention Branch. The approximate cost to complete the excavation and offsite disposal of approximately 400 drums (mostly crushed and broken) and associated contaminated soil was \$524,000. The cost beyond the ROD estimate was due to a greater than expected number of drums and volume of contaminated soil requiring excavation and off-site disposal.

#### Operable Units 3/4

Although EPA designed both OU 3 (groundwater pump and treatment) and OU 4 (in situ soil vapor extraction and treatment) separately, a delay in receiving funds to implement the first completed design (i.e., groundwater) resulted in a schedule convergence for both operable unit remedial actions. At that time, EPA decided that it would be cost-effective to construct both operable unit treatment processes simultaneously in a shared facility, with an integrated process for treating both contaminated vapor and groundwater. Hence, a treatment facility to implement both OU3 and OU4 was constructed under one work assignment by the Tyree Organization, a subcontractor to FWEC. The subcontract award was for \$5,552,601. The total actual cost at the time of construction work assignment closeout was estimated by FWEC to be \$7,519,411.

Recently, Tyree has threatened to file a judicial claim against Foster Wheeler for reimbursement of past costs that Foster Wheeler had withheld during construction and completion of construction punchlist items, because of alleged performance problems with Tyree. As this matter is currently the subject of pre-trial negotiations, the final construction costs for OUs 3/4 are not available at this time.

#### Operable Unit 5

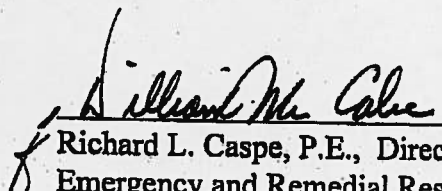
OU 5 was performed by Dow Environmental, a subcontractor to FWEC. The actual subcontract cost for demolition and removal of all structures and tanks from the Site was approximately \$1,282,900.

### VI. FIVE-YEAR REVIEW

While this site had extensive contamination, EPA selected a remedy that will eventually clean up the soil and groundwater to levels which will allow for unlimited use and unrestricted exposure. It is the policy of EPA to conduct five-year reviews when a remedial



action will take longer than five years to complete. Consequently EPA will conduct a five-year review of this site within five years of the date of this report.

  
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Richard L. Caspe, P.E., Director  
Emergency and Remedial Response Division

6/30/00  
Date